

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of September 28, 2007.

Reconsideration of the Application is requested.

I. The Office Action

Claims 7-10 were objected to because of a number of informalities.

Claims 1-2, 4-5, 7, and 9-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito (U.S. Pat. No. 6,330,529) in view of Lamoure (U.S. Pat. No. 5,416,312).

Claims 3 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lamoure and further in view of Zdybel et al. (U.S. Pat. No. 5,486,686).

Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lamoure and further in view of Kuo ("Assist Channel Coding for Improving Optical Character Recognition," 2000).

II. The Present Application

Claims 1-17 remain in this application. No claim has been canceled or withdrawn. Claims 1, 5, 7-9, and 14 have been amended herein. New claims 18 and 19 have been added herein.

By way of brief review, the present application is directed to document image encoding and decoding. More particularly, the present application is directed toward a method and apparatus for translating a document written in a first language into a second language using a code embedded in the document image. When a document is created in a first language, but is to be converted into a second language, accuracy in translation can be ensured by embedding codes in the document that assist in the translation of the document from the first language to a second language. The subject matter of the present application addresses the implementation of image encoded translation data.

The methods and apparatuses of the instant application show an effective implementation of embedding translation code data for a document in the document image by employing machine-readable marks, or glyph marks. The translation code data itself can be stored unobtrusively in the image of the document by compressing the data and storing it as byte sequences represented by the individual glyphs of the glyph marks. The high resolutions allowed by modern print technology allow vanishingly small glyphs, and groups of such adjacent glyphs (such as a glyph mark) appear as gray scale to the unaided eye. The data compression further reduces the size of the glyph mark necessary to represent the translation data, allowing multiple translations to be placed on the face of a document unobtrusively or even artistically hidden on the very page surface that contains the corresponding source language text. This allows each page to be translated by itself, even when other pages of the document are unavailable.

III. The Cited References

In contrast, neither Ito nor Lamoure are concerned with the implementation of image encoded translation data. Instead, Ito simply discusses the markup of a translation in a document. In Ito, a document written in a markup language includes an original document and a translation of that document or other translation data, and the markup language is used to hide or display the information at the user's request and by the author of the markup language document's design. There is no encoding of translation data here, nor constant display of that translation data on the image of the document.

While Ito had nothing to do with encoding data in an image, Lamoure has nothing to do with encoding translation data in an image. Lamoure shows a way to place computer readable location index references at the appropriate location within a document. However, Lamoure does not encode the data itself. While the Examiner notes that Lamoure states "Different applications could include automatic translation," all the data is stored outside of the document itself. As Lamoure states, "each location index serves as a key giving access to information that is not provided on the document." In an apparent teaching away from encoding information in the document

itself, Lamoure continues, stating that the information “may differ according to the intended use thereof and can be easily updated.”

Neither reference on its own or in combination teaches or suggests the elements of the basic utility and purpose of the present application. As this suggests, and as is discussed below, the references do not teach or suggest the elements of the claims either.

IV. Objection to Claims

Claims 7-10 were objected to because of a number of informalities. The claims, as amended, are without informalities.

The Examiner objected to claim 7 for employing the abbreviation “OCR” and suggested a corrected form. In light of the Examiner’s comments, claim 7 has been amended to recite “optical character recognition” instead.

The Examiner objected to claim 8 by virtue of its dependency for failing to overcome the objection to its parent claim 7. In light of the Examiner’s comments, claim 8 has been amended to recite “optical character recognition” instead of OCR.

The Examiner objected to claim 9 for reciting “image date” and suggested the corrected form “image data.” In light of the Examiner’s comments, claim 9 has been amended to recite “image data.”

The Examiner objected to claim 10 by virtue of its dependency for failing to overcome the objection to its parent claim 9. However, claim 9 has been amended to overcome the objection, and no amendment to claim 10 is necessary.

These amendments were made to correct informalities, and are not to be construed as limiting the claims. In view of the foregoing, Applicants submit that the claims are in acceptable condition and respectfully request the Examiner to withdraw these objections.

V. Rejection of Claims Under 35 U.S.C. § 103(a)

Independent Claim 1 and its Dependent Claims are Distinguished from the Prior Art

The Examiner has rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lamoure. Applicants respectfully traverse the rejection.

This rejection should be withdrawn at least because Ito in view of Lamoure does not teach or suggest the subject matter as set forth in the subject claims.

Independent claim 1 recites “[a] method for generating image data for a document comprising [...] encoding the translation data in a machine-readable code, wherein the machine-readable code is not human-readable when rendered [....]” Ito in view of Lamoure does not teach or suggest these limitations of claim 1.

In particular, the Examiner asserts that the discussion of translation and display in column 5, lines 1 -50 and column 6, lines 40-59 of Ito are sufficient to disclose “encoding the translation data in a machine readable code.” Applicants respectfully submit that this process in Ito is not encoding the translation data, but markup of the translation data. Applicants note that Ito does not describe its markup process as “encoding,” but as “embedding.” In the markup process described by Ito, the text and data of the translation remain in their original unmodified form, albeit interdicted by additional markup data describing what parts of the translation data to display, and when. Encoding data implies a change in the rendering of the data, as evidenced by the latter half of the limitation “wherein the machine-readable code is not human-readable when rendered.” As there is no change in the rendering of the data in the process of Ito, Ito does not teach or fairly suggest this element of claim 1.

Lamoure does not cure Ito’s failure to teach or suggest this element of encoding the translation data. Lamoure describes location indices which serve “as a key giving access to information that is not provided on the document.” (Column 2, lines 14-40). The information itself, however, is not encoded, as it is stored separately within a data processing data medium. Although Lamoure recites in column 8, lines 16-22, that automatic translation is a potential application of its invention, the translation of that data has not been encoded. It has been indexed and recorded elsewhere. Therefore, Ito in view of Lamoure does not teach or fairly suggest this element of claim 1.

Further it is acknowledged in the instant Office Action that certain humans could still read this marked-up translation of Ito, because it is still letter based. Thus, Ito does not teach or fairly suggest this element of claim 1.

Lamoure does not cure Ito’s failure to teach or suggest this element. The Examiner states “Lamoure [...] recites the ability to overlay image data on top of

document text that indicates translation data,” and that “[t]his code-indicative image scheme cannot be read by a human [...]” Indicating code is not the same as incorporating code. Claim 1 recites “wherein the machine-readable code is not human-readable when rendered,” and that machine-readable code incorporates the translation data. It does not merely indicate it. Thus, Ito in view of Lamoure does not teach or fairly suggest this element of claim 1.

For at least the aforementioned reasons, Ito and Lamoure individually and in combination do not teach or suggest the subject matter as recited in independent claim 1 or claims 2-4 and 18 which depend therefrom. Therefore, claims 1-4 and 18 are not unpatentable over Ito in view of Lamoure. Accordingly, Applicants respectfully request the Examiner withdraw this rejection.

Independent Claim 5 and its Dependent Claims are Distinguished from the Prior Art

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lamoure. This rejection should be withdrawn at least because Ito in view of Lamoure does not teach or suggest the subject matter as set forth in the subject claims.

Independent claim 5 as amended recites “[a] method for converting a document from a first language into a second language comprising the steps of: receiving image data indicating a document, [...] said image data including language translation data encoded in binary machine-readable code embedded in said image data such that when said document is rendered, the encoded language translation data is both rendered on the document and not human-readable.” Ito in view of Lamoure does not teach or suggest these limitations of claim 5.

In particular, the claim has been amended to recite that the translation data is encoded in binary machine-readable code. Applicants are unable to find any mention of encoding in binary in Ito, which teaches a mode of markup for translated documents. With no mention or suggestion of binaries in the disclosure of Ito, Ito does not teach or fairly suggest this element of claim 5.

Lamoure does not cure Ito’s failure to teach or suggest this element of encoding translation data in binary. Lamoure’s few mentions of binary go toward encoding

location reference markers which refer to data (e.g. translation data) regarding a location on the document, and stored outside of the image data. As Lamoure states, “[e]ach location index serves as a key giving access to information that is not provided on the document [...]” Thus, the binaries of Lamoure do not encode the translation data for the document. Therefore, Ito in view of Lamoure does not teach or fairly suggest this element of claim 5.

In further particular, the claim has been amended to recite that the encoded translation data is embedded such that when said document is rendered, the encoded language translation data is both rendered on the document and not human-readable. Applicants are unable to find any mention of rendering the encoded translation data on the document in Ito. Even assuming for the sake of discussion that the HTML markup of translation data described in Ito would qualify as encoded translation data, it would be counter to the purpose of Ito to display it on the document. With no mention of rendering encoded translation data on the document, Ito does not teach or fairly suggest this element of claim 5.

Lamoure does not cure Ito’s failure to teach or suggest this element of rendering the encoded translation data on the document. As discussed above, the binary marks rendered on the document of Lamoure do not comprise the encoded translation data, and so Ito in view of Lamoure does not teach or fairly suggest this element of claim 5.

For at least the aforementioned reasons, Ito and Lamoure individually and in combination do not teach or suggest the subject matter as recited in independent claim 5 or claims 6-13 which depend therefrom. Therefore, claims 5-13 are not unpatentable over Ito in view of Lamoure. Accordingly, Applicants respectfully request the Examiner withdraw this rejection.

Independent Claim 14 and its Dependent Claims are Distinguished from the Prior Art

The examiner has rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Ito in view of Lamoure. This rejection should be withdrawn at least because Ito in view of Lamoure does not teach or suggest the subject matter as set forth in the subject claims.

Independent claim 14 as amended recites “A method for generating image data for an output document, comprising [...] encoding each set of the language translation data in a machine-readable code segment, wherein the machine-readable code segment is recorded by elongated slash-like marks written on a generally regular lattice of centers in a glyph mark that is not human-readable when rendered as image data in the output document.” Ito in view of Lamoure does not teach or suggest these limitations of claim 14.

In particular, claim 14 has been amended to recite that the machine-readable code segment is recorded by elongated slash-like marks written on a generally regular lattice of centers in a glyph mark when rendered as image data in the output document. Assuming for the purpose of discussion that the process of Ito actually comprises the encoding into machine readable code rather than simply the marking up of the language translation data, an output document recording the output of this process is contains only marked up, human readable code recorded in ordinary text, and not by elongated slash-like marks written on a generally regular lattice of centers in a glyph mark. Ito does not thereby teach or fairly suggest this element of claim 14.

Lamoure does not cure Ito’s failure to teach or suggest this element of recording the encoded translation data as elongated slash-like marks written on a generally regular lattice of centers in a glyph mark when rendered in the output document. Assuming for the sake of argument that the indexes of Lamoure are equivalent to the glyph marks of the present application, these indexes “comprise a group of dots” rather than slash marks. Therefore, Ito in view of Lamoure does not teach or fairly suggest this element of claim 14.

In further particular, Applicants reiterate their arguments in favor of claim 1 and apply them to similar portions of claim 14. Applicants respectfully submit that the process in Ito which the Examiner cites as teaching or suggesting “encoding the translation data” is not encoding, but markup of the translation data. Lamoure does not cure Ito’s failure to teach or suggest encoding the translation data, as it does not encode the data, but stores it in another location. These arguments are discussed in greater detail in the section on independent claim 1 above, but apply to certain similar

elements of claim 14. Again, Ito in view of Lamoure does not teach or fairly suggest these elements of claim 14.

The Examiner has dealt to a certain extent with the matter of glyph marks in his rejections of claims 3 and 6. These claims describe different limitations and the reference against them is not part of the instant rejection of claim 14. However, Applicants feel that they should briefly note the inapplicability of the reference cited against claims 3 and 6 to amended claim 14. Applicants have reviewed Zdybel, and are unable to find any teaching or suggestion that the machine-readable code segment is recorded by elongated slash-like marks written on a generally regular lattice of centers in a glyph mark when rendered as image data in the output document. Thus, Ito in view of Lamoure, further in view of Zdybel would not teach or fairly suggest these new elements of amended claim 14.

For at least the aforementioned reasons, Ito and Lamoure individually and in combination do not teach or suggest the subject matter as recited in independent claim 14 or claims 15-17 which depend therefrom. Therefore, claims 14-17 are not unpatentable over Ito in view of Lamoure. Accordingly, Applicants respectfully request the Examiner withdraw this rejection.

VI. New Claims 18 – 21

New claims 18-21 represent further distinguishing aspects of the present application. The elements of the claims are fully supported by the specification and do not constitute new matter. Applicants believe the new claims to be in allowable condition. Accordingly, Applicants respectfully request that the Examiner so indicate.

CONCLUSION

For the reasons detailed above, it is submitted all remaining claims (Claims 1-20) are now in condition for allowance. An early notice to that effect is earnestly solicited. The foregoing comments do not require unnecessary additional search or examination.

☒ Remaining Claims, as delineated below:

| (1) FOR | (2) CLAIMS REMAINING AFTER AMENDMENT LESS HIGHEST NUMBER PREVIOUSLY PAID FOR | | (3) NUMBER EXTRA |
|-----------------------|---|--------|------------------|
| TOTAL CLAIMS | 21 | - 20 = | 1 |
| INDEPENDENT CLAIMS | 3 | - 3 = | 0 |

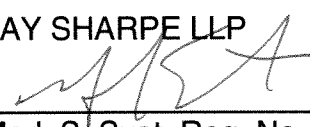
☒ This is an authorization under 37 CFR 1.136(a)(3) to treat any concurrent or future reply, requiring a petition for extension of time, as incorporating a petition for the appropriate extension of time.

☒ The Commissioner is hereby authorized to charge any filing or prosecution fees which may be required, under 37 CFR 1.16, 1.17, and 1.21 (but not 1.18), or to credit any overpayment, to Deposit Account 24-0037.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Mark S. Svat, at Telephone Number (216) 861-5582.

Respectfully submitted,

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